Peptide-Catalyzed Diastereo- and Enantioselective Cyclopropanation of Aromatic α,β-Unsaturated Aldehydes


Cyclopropanation of α,β-Unsaturated Aldehydes with a Supported Peptide

Significance: The amphiphilic resin-supported peptide 1 catalyzed the diastereo- and enantioselective cyclopropanation of aromatic α,β-unsaturated aldehydes 2 with dimethylphenacylsulfonium bromide in the presence of NaHCO₃ to give the corresponding cyclopropanes 3 in 83–88% yield with 98–99% ee and 92–97% diastereoselectivity (9 examples, eq. 1). In the formation of 3g, the catalyst was recovered by filtration and reused five times without significant loss of its catalytic performance (1st reuse: 87% yield, 99% ee, 94% diastereoselectivity; 5th reuse: 83% yield, 99% ee, 95% diastereoselectivity).


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